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ABSTRACT

This teaching unit, Introduction to Dairy Occupations, is one in a series of career guides developed by Project CHOICE (Children Have Options in Career Education) to provide the classroom teacher with a source of career-related activities linking third and fourth grade elementary classroom experiences with the world of work. Part of the Agriculture and Ecological Studies Career Cluster, these nine lessons discuss the processes involved in bringing milk products to the consumer, review the many occupations associated with dairy products, and give educational and other skills required for these occupations. An introductory section gives the unit rationale, goals, performance objectives, entry-level assessment, and evaluation. A list of instructional materials, such as films, filmstrips, books, art supplies, and community resources, is included in this section. Each lesson contains a statement of purpose, materials needed for the lesson, an introductory statement, class activities, and a summary activity. Written materials (such as worksheets, surveys, and task cards) are included where feasible. (This guide is one of twenty-four in the series for grades 3 and 4--CE 025 766-789.) (MEK)

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OFFICE OF CLAUDE W. RICHARDSON
KERN COUNTY SUPERINTENDENT OF SCHOOLS

Project CHOICE

~~#68~~ #1

A CAREER EDUCATION UNIT FOR GRADES 3 AND 4

INTRODUCTION TO DAIRY OCCUPATIONS

(Agriculture and Ecological Studies Career Cluster)

2

March, 1978

U S DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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FOREWORD

Project CHOICE: Children Have Options in Career Education, is an Exemplary Project from the San Diego City School District, which has been adapted, with ESEA Title IV-C funding, for Kern County Schools.

Through Project CHOICE, units have been developed to provide the classroom teacher with a source of career-related activities linking classroom experiences with the world of work. All students, regardless of their post-high school plans, share an equal need for career awareness, decision making skills, and other elements of career education. This goal can be accomplished if all teachers and counselors "fit" the appropriate units where they best apply in the curriculum.

We are indebted to the San Diego City School District, and the Project CHOICE staff, for developing and field testing the original units.

For their excellent work in re-writing the units in order to adapt them for use in Kern County Schools, we wish to recognize:

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Cynthia Silliman
Richland School District

Janet S Wells

Janet Wells
Career Education Resource Teacher
Guidance Services

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Agriculture and Ecological Studies
Career Cluster

INTRODUCTION TO DAIRY OCCUPATIONS

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Agriculture and Ecological Studies
Career Cluster

INTRODUCTION TO DAIRY OCCUPATIONS

TEACHERS' GUIDE

RATIONALE

Many of us consume various dairy products on a daily basis. Not all of us are aware of the processes involved in bringing these products to our tables. Through this unit, children can become aware of those processes, as well as the various occupational fields associated with milk products.

GOALS

The students will:

- Learn about the processes involved in bringing various milk products to our tables.
- Become aware of the many occupations associated with dairy products.
- See the relationship between educational skills and skills required in dairy occupations.
- Become aware of safety and sanitation laws associated with the production of milk.
- Understand the responsibility food producers have to the consumer.
- See the part selling and advertising play in getting milk to us.

PERFORMANCE OBJECTIVES

The students will be able to:

- Name 8 products derived from milk.
- Name 5 occupations involved in bringing milk to our tables.
- List (or draw pictures of) 8 processes involved in getting milk to us.
- Describe the relationship of school skills to skills needed in various occupations.
- Name 5 pieces of machinery or equipment needed in the production of milk.

- Describe safety and sanitation procedures associated with the production of milk.

- Gain an appreciation and understanding of the consumer/producer relationship.

- Become aware of the selling and advertising aspects of dairy products.

ENTRY LEVEL ASSESSMENT
(To be used as a pre-test and post test.)

Use this informal inventory to determine class awareness of the Dairy Industry. Responses may be taped or written and compared to the post test.

1. Name some products derived from milk.

2. Can you name some jobs people might have which are associated with milk production?

3. Can you tell about any safety or sanitation procedures that are important in producing milk?

4. In what ways are food producers responsible to consumers?

5. What machinery and equipment might be used in getting milk products from the farm to us?

6. What school skills might be needed by someone involved in the production or distribution of milk products?

EVALUATION

The final lesson has been set aside for evaluation. The Entry Level Assessment may be used as a pre-test as well as a post test, or the teacher may wish to develop his/her own. Responses may be taped or written, so that comparisons may be made in order to determine how well pupils have achieved the objectives.

SUGGESTED INSTRUCTIONAL MATERIALS

The following materials and equipment may be used in this unit:

- Films, as listed.
- Books, as listed.
- Chart paper.
- Butcher paper.
- Magazines.
- Scissors.
- Glue.
- Pictures of steps in milk processing.
- Felt pens.
- Crayons.

- A variety of art materials.
- Film projector.
- Task cards.
- Permission slips.

Films:

California Dairy Story
Challenge
Modern Milk Marketing
New Horizons Along the Milky Way
Dairy Farm
Milk
New Story of Milk

Books:

Title	Author
Let's Go to a Dairy	Goodspeed
World Book Encyclopedia, Volume 13	

AVAILABLE IN INSTRUCTIONAL RESOURCES CENTER (IRC): OFFICE OF THE KERN COUNTY SUPERINTENDENT OF SCHOOLS
(Please preview first to be certain of suitability for specific students and situations.)

Film:

Dairy to Farm MP 5888

COMMUNITY RESOURCES

The following resources may be used in this unit:

- California Dairy Council, contact U. S. Dept. of Agriculture; 861-4125.
- Local dairy
- Local milk processing plant
- Local milk route salesman
- Larson's Dairyland Farms, Bakersfield; 589-3291 - Self conducted tours only (milking daily at 1:00 p.m.)
- Jessup Hospital Barn - Grower and Calf Unit; contact Lynn Underwood, 845-2853.

INSTRUCTIONAL STRATEGY: LESSONS 1-9

Lesson 1

PURPOSE — To identify various milk products.

MATERIALS

1. Large chart or butcher paper.
2. Felt pen.
3. Magazines.
4. Scissors.
5. Glue.
6. Task Cards 1 through 3.

INTRODUCTION — Say: "Every day each of us consumes products made from milk. We often call these dairy products. Let's make a list of these products."

CLASS ACTIVITIES

1. On the board, list the various products. Then transfer the names of these products to the chart paper. Divide the paper into sections, labeling each one with the name of a dairy product.
2. Have the students cut out pictures of the various products to paste onto the appropriate section of the butcher paper.

SUMMARY

1. Discussion of chart created by the class.
2. Reports from students using task cards.

Lesson 2

PURPOSE

To identify the steps involved in bringing milk from the farm to us.

MATERIALS

1. Suggested film: Dairy to Farm, #5888.
2. Set of labeled pictures.*
3. Task Cards 4 and 5.

INTRODUCTION

Say: "There are many steps involved in getting milk from the farm to us. Let's watch this film and pay particular attention to these steps."

CLASS ACTIVITIES

1. Watch the above listed film (or any suitable substitute.)
2. As a class, arrange the set of pictures in the proper sequence in order to show the steps involved in bringing milk from the farm to the table.

SUMMARY

1. Review of picture arrangement.
2. Reports from students using task cards.

*The California Dairy Council can help with this. Or you may develop a set of pictures by using pages 462, 463, World Book Encyclopedia, Volume 13.

Lesson 3

PURPOSE	To acquaint children with the processes involved in milk production.
MATERIALS	1. Field trip to local dairy. (See suggestion in Community Resources section.) 2. Task Cards 6 through 8.
INTRODUCTION	Say: "So far in our study of dairy occupations we have talked about dairy products and the process of getting milk from farm to table. Today we will visit a dairy and observe how milk is produced."
CLASS ACTIVITIES	1. Have a discussion of standards for behavior while on the field trip. 2. Take the field trip. 3. Do task cards.
SUMMARY	Write a thank-you letter to the dairy (Task Card 6.)

Lesson 4

PURPOSE

To develop an understanding of safety and sanitation procedures associated with milk production.

MATERIALS

1. Information sheet, next page.
   and
2. Worksheet, page 9.
3. Task Cards 9 and 10.

INTRODUCTION

Say: "At the dairy, we observed the precautions taken to insure that the milk we drink is bacteria free. Today we will learn about some of the tests invented by various scientists that help milk processors insure the purity of their product."

CLASS ACTIVITIES

1. Distribute information sheet.
2. Read and discuss.
3. Using information sheet, complete worksheet.
4. Do task cards.

SUMMARY

1. Review worksheet.
2. Reports from students using task cards.

INFORMATION SHEET

Following are descriptions of various tests used to determine milk safety and flavor. Read them to help you complete the worksheet.

The Babcock Test: This test was invented in 1890 by Stephen M. Babcock. It shows the butterfat content of milk. Milk is mixed with sulphuric acid, which melts the fat. A bottle of this mixture is whirled in a machine called a centrifuge. The fat content can be read on a scale on the bottle.

The Methylene Blue Test: This test is a simple method of indicating the approximate number of bacteria in milk. Blue dye is added to a small quantity of milk, which is heated and examined every hour. The longer it takes the blue color to disappear, the fewer bacteria are present.

The Lactometer Test: This test determines the weight of milk, compared to an equal amount of water. It shows whether the milk has been watered, or whether any cream has been removed.

The Acidity Test: This test shows the amount of acid in milk. Milk that contains too much acid can taste sour and cannot be properly processed. An alkaline solution is added to a sample of milk, and a color indicator shows the acid content.

The Breed Test: This is a method of counting bacteria in milk, developed by R. S. Breed of Geneva, New York. A tiny drop of milk is spread on a glass slide. After it is dried and stained, the bacteria can be counted under a microscope.

The Standard Plate Count: This is another way of counting bacteria in milk. Milk diluted with sterile distilled water is placed in a germ-free dish and mixed with a solution called sterile agar medium.

Name_____

Date_____

WORKSHEET

Directions: Answer the following questions, using the Information Sheet as a guide.

1. A test which can be used to show the butterfat content of milk is called the _____Test.

2. Name three different tests used to determine the number of bacteria in milk:

   _____

   _____

   _____

3. The Acidity Test is used to avoid milk that tastes

   _____

4. To be sure that milk is not watery, or that the cream has not been removed, dairy scientists use the:

   _____Test.

5. All of the tests described on the Information Sheet are designed to determine milk's:

   _____

   _____

Lesson 5

PURPOSE

To create an awareness of the selling and advertising aspects of dairy products occupations.

MATERIALS

1. Resource person (ask a local salesman.)*
2. Task Cards 11 and 12.

INTRODUCTION

Say: "We have spent much of our time studying the production end of dairy occupations. Today we have with us a person whose job it is to sell and/or deliver milk products to us."

CLASS ACTIVITIES

1. Listen to resource person.
2. Question and answer period.

SUMMARY

Reports from students using task cards.

*This could be a retail salesman (house-to-house) or a wholesale deliverer to retail stores.

Lesson 6

PURPOSE

To identify and discuss the many and varied dairy-associated occupations.

MATERIALS

1. Large sheets of lined newsprint.
2. Several felt pens.
3. Task Cards 13 through 15.

INTRODUCTION

Say: "We have learned about many dairy occupations. Let's divide into groups and make lists of these occupations."

CLASS ACTIVITIES

1. With one person acting as recorder, the groups list as many dairy occupations as they can.
2. When lists are completed, tape to board or hang where they are easily seen.

SUMMARY

1. Review of lists compiled by various groups.
2. Reports from students using task cards.

Lesson 7

PURPOSE

To examine the relationship between school (educational) skills and skills needed in various dairy occupations.

MATERIALS

1. Lists of jobs from Lesson 6.
2. Felt pens.
3. Task Cards 16 and 17.

INTRODUCTION

Say: "At various times we have discussed school skills. What are some of these skills we learn at school?"

CLASS ACTIVITIES

1. List all of the skills as they are contributed by the class. Assign a number to each skill.
2. Return to each group the lists of jobs prepared by them in Lesson 6. Beside each job they will list by number the school skills needed to perform that job.
3. Each group should prepare to defend the choices.

SUMMARY

1. Discussion of group lists.
2. Reports from students using task cards.

Lesson 8

PURPOSE

To establish an understanding of the producer/consumer relationship.

MATERIALS

1. Sample package (empty) of a dairy product.
2. Chart paper and felt pen (or board and chalk.)
3. Task Cards 18 through 20.

INTRODUCTION

Say: "Have you ever noticed the date stamped on the containers of dairy products? Do you know what it means, why it is there, or how it got there?"

CLASS ACTIVITIES

1. Discuss the dating method in terms of the responsibility producers have to consumers.
2. List other responsibilities producers have to consumers. (Freshness, reasonable price, availability, truth in advertising, etc.)
3. Discuss reciprocal responsibilities. (Paying bills, letting route salesman know if you'll be away, informing store personnel if products are not fresh, etc.)

SUMMARY

The list acts as a summary. Reports from students using task cards.

Lesson 9

PURPOSE

To evaluate what the children have learned.

MATERIALS

1. Tape recorder.
2. Tape from Entry Level Assessment.
3. All task cards from unit.

INTRODUCTION

Say: "Today we will find out what we've learned about the dairy industry. Let's listen to the tape we made at the beginning of this unit. Let's find out how much more we know now."

CLASS ACTIVITIES

1. Listen to first tape.
2. Make new tape involving original questions and any new comments on the unit the children might care to make.
3. Free use of task cards.

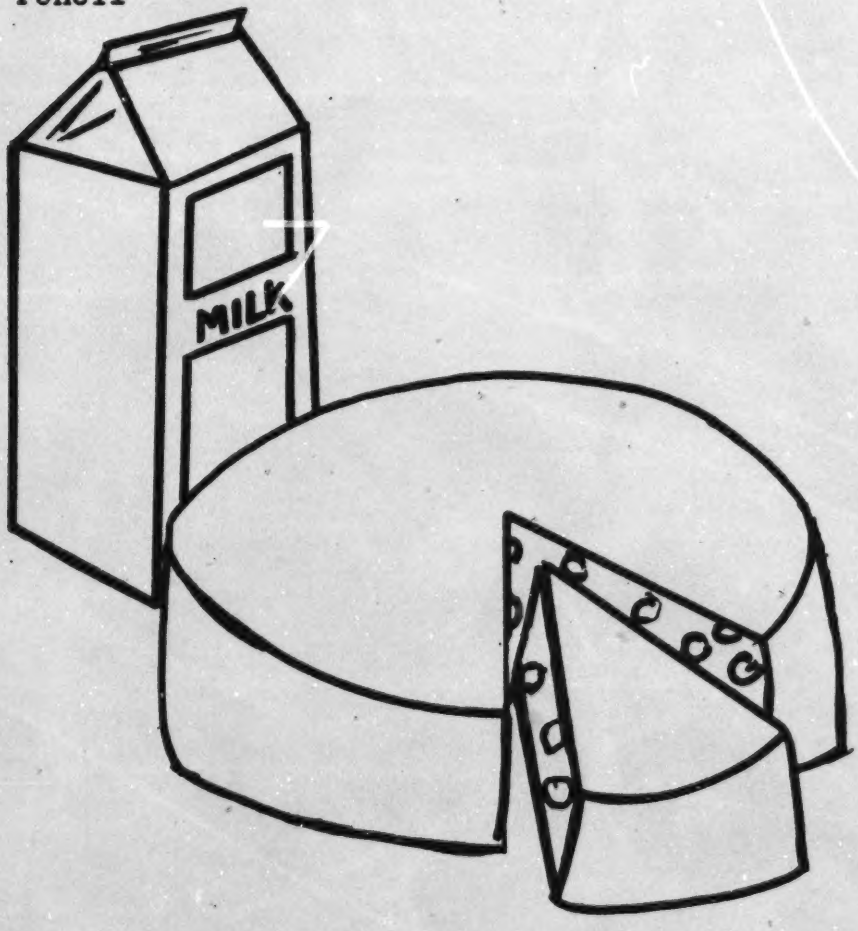
SUMMARY

The tape acts as a summary.

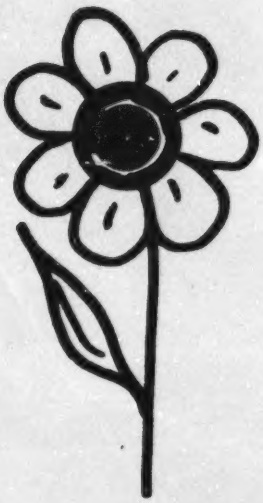
STILL LIFE

You need:

1. Artistic ability
2. Crayons, chalk or felt pens
3. Large sheet of manila paper
4. Pencil



Think about the various dairy products you now know. Do a still life sketch using only these products. Color it with crayons, chalk or felt pens. Share it with the class.



ALL IN A DAY'S EATING

You need:

1. Ditto sheet: Task Card 2a
2. Pencil
3. Powers of observation

Beginning tomorrow morning, list (in words or pictures) everything you eat during the day.

Then, count and identify all the dairy products on your list.

Bring to class to share.

Task Card 2a

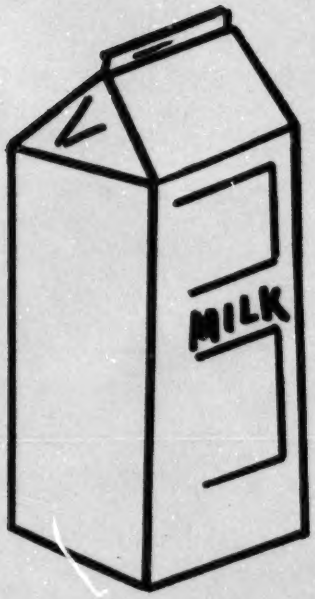
NAME_____

DAILY FOOD CHART

Breakfast	Lunch
Dinner	Snacks

Which are dairy products?

DAIRY PRODUCT MODEL



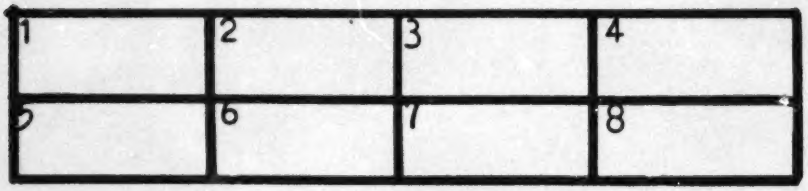
You need:

1. Creative ability
2. Empty dairy products containers
3. Large piece of chipboard
4. Glue

Arrange the containers creatively on the chipboard. When you are sure your model looks the way you wish, glue the containers in place.

You might want to color or paint parts.

STEP BY STEP



You need:

1. Manila paper
2. Pencil, felt pens and/or crayons

Divide your paper into eight equal sections, either by folding or drawing lines. Number the sections 1 - 8.

Draw pictures to show the main steps involved in bringing milk from the farm to our tables.

RESEARCH AND REPORT

You need:

1. Reference book
2. Paper and pencil
3. An interest in research

Select one of the main steps involved in getting milk from farm to table.

Use a reference book to find out more information about that step.

Write a report to share with the class.

THANK YOU!

MERCÍ.

MUCHAS GRACIAS.

DANKE.

You need:

1. A courteous attitude
2. Paper and pencil

Yesterday you went on a field trip to a dairy. It is courteous to thank those who took their time to share with you.

Write a note expressing thanks. Your teacher will tell you whose name to use in the greeting.

"I SAW IT AT THE DAIRY"

You need:

1. Worksheet: Task Card 7a
2. Pencil and paper

Think about what you observed on your trip to the dairy.

Use this information to complete the worksheet.

Name_____

FIELD TRIP WORKSHEET II

I. At the dairy I saw: _____

_____

_____

_____

_____

_____

II. Until I visited the dairy, I didn't know that:_____

_____

_____

_____

III. What I most enjoyed on my trip to the dairy was:_____

_____

_____

_____

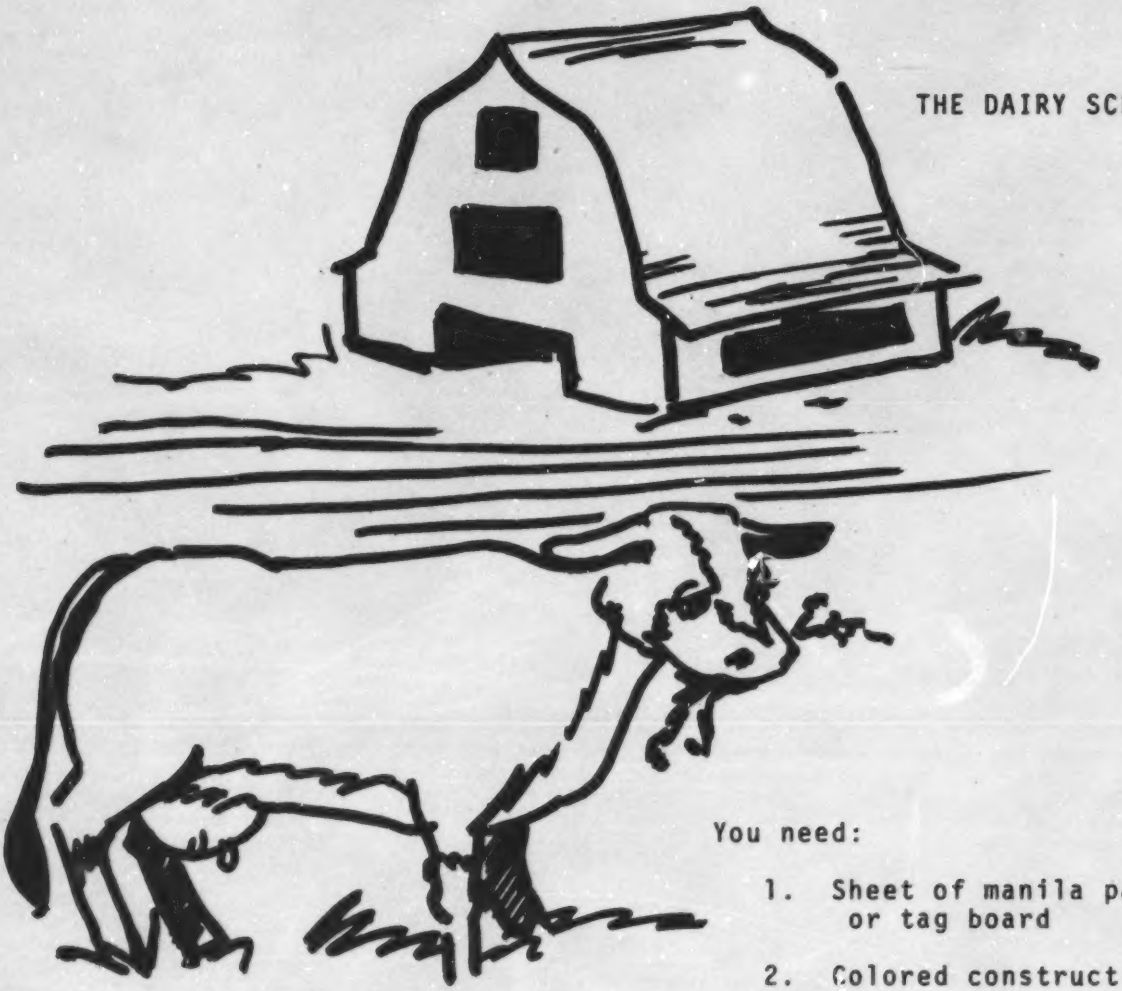
_____

_____

_____

TASK CARD 8

THE DAIRY SCENE



You need:

1. Sheet of manila paper or tag board
2. Colored construction paper
3. Scissors and glue

Cut out things that you would find at a dairy.

Arrange them on the sheet of manila paper to show a dairy scene.

When the arrangement pleases you, glue the pieces in place.

TASK CARD 9

LOUIS PASTEUR: SCIENTIST

You need:

1. Research ability
2. Pencil and paper
3. Encyclopedia

Louis Pasteur made an important contribution to science and to us. Use an encyclopedia to find out about his contribution. Write a report and share it with the class.

IS IT PURE?

You need:

1. Acting ability
2. Knowledge of tests and procedures used to ensure the purity of milk

Using your knowledge, role play a situation where:

A. A scientist makes an important discovery regarding milk purity tests.

B. A consumer drinks impure milk.

C. A newscaster reports to the public that a great deal of impure milk has reached the market.

WILL YOU BE MY CUSTOMER?

You need:

1. Acting ability
2. One or two friends

A milk route salesperson needs to build up a clientele. With one person playing the part of the salesperson, create and present a skit wherein a milk route salesperson is working to convince one or more people to buy some dairy products.

BUT WILL IT SELL?

You need:

1. Magazines
2. Newspapers
3. Radio and TV
4. Drawing Materials

Any product-oriented occupation uses advertising, whether in magazines and newspapers, radio or television. Become aware of the advertising of dairy products by:

A. Collecting and sharing written ads

B. Observing and listening to ads on radio and TV

C. Writing and illustrating an ad of your own

D. Presenting a radio or TV ad.

ASK ME ANYTHING . . .

You need:

1. Paper
2. Pencil
3. Resource person

Interview someone who works in a dairy occupation.

Share your interview with the class.

Find out:

1. What does the worker do?
2. Does the worker enjoy his or her work?
3. What are the work hours?
4. What kind of training was needed?

I'D LIKE IT!

I'D HATE IT!

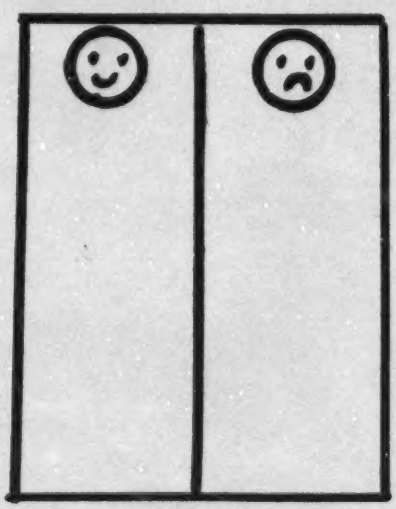
You need:

1. List of dairy occupations made by the class
2. Paper and pencil

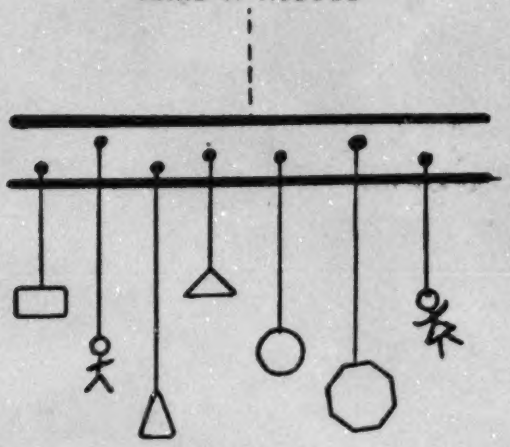
Divide your paper into two parts. On one side, list the dairy occupations you feel you might enjoy.

On the other side, list those you feel you would <u>not</u> enjoy.

Be prepared to tell <u>why</u> you listed as you did.



MAKE A MOBILE

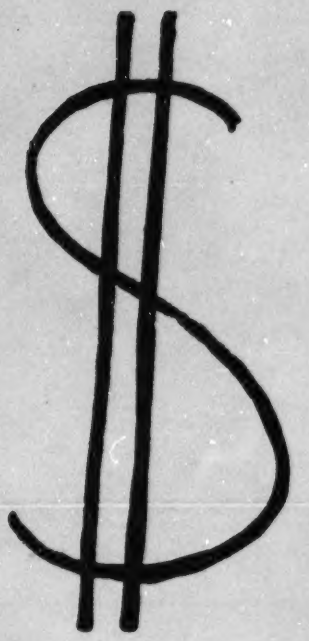


You need:

1. Colored construction paper
2. Piece of cardboard
3. Crayons or felt pens
4. Scissors
5. String

First think of all the dairy occupations you can. Then, either cut out various shapes and label them with the names of these occupations, or cut out figures to stand for these workers. (If you like, you might do some of each.)

Attach these shapes to strings. Then attach the free ends to the piece of cardboard. When it is balanced, hang it as a mobile.



ADD IT UP

You need:

1. Math ability
2. Pencil and paper

You are a route salesperson for dairy products. At the end of each month, you must balance your books. Here is some information you will need:

Bills (I owe)

To wholesaler: $259.62

Customers Owe Me

Jones	$27.46	Jackson	$39.58
Smith	82.17	Frank	67.25
Black	39.28	Bloom	19.42
Thomas	16.72	Harmon	28.36
Johnson	78.84	Stevens	54.19
White	46.92	Nelson	37.16

After collecting all the money owed me, how much profit will I make?

HOW MUCH WOULD HE NEED IT?

You need:

1. An alert mind
2. Pencil and paper
3. Ruler

Down the side of your paper, list five dairy occupations. Across the top of your paper, write the headings: READING, MATH, SPELLING, COURTESY, WRITING, ART, MUSIC and INDEPENDENCE. Divide your paper into sections as shown below.

For each occupation you have twenty (20) points. Distribute the points under the various school skills to show how much each skill would be needed in each occupation you listed. (Be sure your total is twenty for each occupation.)

Occupations:	READING	MATH	SPELLING	COURTESY	WRITING	ART	MUSIC	INDEPENDENCE	
1. ———	7	4	1	6	1	0	0	1	= 20
2. ———									
3. ———									
4. ———									
5. ———									

GOOD DAYS/BAD DAYS

You need:

1. Pencil
2. Paper
3. A good imagination

1. Write a note complimenting the milk vendor.
2. Answer it.

1. Write a note complaining to the milk vendor.
2. Answer that note.

Read your notes to the class using appropriate gestures and tone of voice.

WRITE A LIMERICK

You need:

1. Pencil
2. Paper

Write a limerick describing:

A. An angry supermarket customer

B. A child eating a dairy product (ice cream perhaps.)

C. A milk vendor who is being chased by a dog.

IT'S PUZZLING

You need:

1. Tag board
2. Glue
3. Scissors
4. Magazines

Cut out a large, bright picture advertising dairy products.*
Glue it to the tag. Cut out pieces to make a puzzle.

Give it to a friend to put together.

*If you prefer, you could draw and color a picture of your own.

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